

Intensive Rehabilitation

Recent Experience in a Chronic Disease Hospital

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THE CONCEPTS of patient care in acute and chronic disease hospitals have become fairly well established and fixed. Minor changes appear as knowledge, techniques and drugs improve or as disease patterns change.

The acute hospital functions as the center for diagnosis and care, covering nearly all disease entities. The average period of hospitalization is less than two weeks. If, after diagnosis and definitive care have been accomplished, the patient has not recovered sufficiently to be discharged, he is transferred to a chronic disease facility, if such exists and if a bed vacancy is available.

The chronic disease or long-term illness hospital, whichever it may be termed, is usually prepared for a minimal or slightly higher level of medical care. Facilities for diagnosis and care of patients in acute phase of disease are minimal because it is assumed that the patients entering such units have passed that stage. If complications of an acute nature develop or new problems arise, the patient is returned to the acute hospital for care. The ratio of physicians to number of patients is relatively small because activity is minimal. The rate of discharge is low and the average length of stay is several years. Hence the admission rate is low.

At first glance this arrangement between acute and chronic facilities seems logical. However, experience with such an arrangement, or even a deeper look at it, points up some serious problems.

At the chronic disease hospital, the limitations of staff and diagnostic facilities make further diagnosis improbable. This is important with regard to cases incorrectly or incompletely diagnosed during the time of stay in an acute hospital. Treatable and sometimes curable conditions are missed, resulting in unfortunate and prolonged hospital care. The lack of diagnostic and treatment opportunities makes it difficult if not impossible to develop and maintain a stimulated and competent professional

• An intensive rehabilitation program for persons with severe physical disabilities was carried on over a two-year period in a 35-bed unit at Rancho Los Amigos Hospital, a chronic disease hospital.

Eighty-five patients were released (69 adults, 16 children) from the program after an average stay of six and a half months. Seventy-one per cent of these were discharged to their homes and the remainder were transferred to convalescent wards so much improved that they required less care, even worked on the grounds.

Over half of the adult patients discharged to their homes became employed, not counting the women who resumed housework.

The average hospitalization for patients in the same hospital without this program is three and a half years. Thus, despite a much higher cost per day for the patients in the intensive rehabilitation program, the total cost is about \$7,640 less per patient discharged from the hospital.

In addition the shorter period in hospital helps meet the ever-increasing demand for chronic disease beds.

staff. These features minimize discharge possibilities.

The acute hospitals are so crowded with patients in critical condition that they can hardly handle the acute problems in their facilities, let alone give adequate attention to reconstructive problems in patients sent back to them from chronic disease hospitals, or even in patients on their own wards who need such care. Despite this situation, planning agencies are still advocating that general hospitals be the center of all active care.

The number of patients with long-term illness is increasing. This is due to improved acute care, which reduces mortality but does not always result in cure, and to increased longevity with additional time for degenerative diseases to develop. The result is an increasing demand for long-term beds, a trend that will continue so long as the prevailing attitude is that active care ceases when the facility for treatment of acute illness feels it has done all it can.

This demand can be met by building more beds, by increasing the discharge rate or by a combination of both. Building more beds is only a temporary

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solution as the number of these patients is cumulative. On the other hand, if some of the patients can be improved by more intensive care, and discharged, the present number of beds would handle more patients. In essence, the only way to meet the increasing demand without continually building more beds, is to increase the salvage or discharge rate.

The question is, can a sufficient number of these patients be salvaged by intensive rehabilitation to warrant the expense of such a program? Administrators will not seek the necessary funds for purely social benefits to the patients, but will do so if economy can be demonstrated.

It is the purpose of this paper to present the results of an intensive rehabilitation program at the Rancho Los Amigos Hospital. The results parallel those reported by Hilleboe³ at the New York State Rehabilitation Hospital. We believe these results answer the above question in the affirmative.

FACILITIES

Rancho Los Amigos Hospital is the chronic disease hospital for Los Angeles County, receiving medically indigent patients from the acute hospitals. The bed capacity is nearly 2,500, plus over 700 nursing home beds under contract. Despite this size, there are between 300 and 500 patients occupying beds in the acute hospitals who are awaiting transfer to this hospital. These patients seriously clog and hamper the activities of the acute hospitals. Half of the patients at Rancho are over 65 years of age and the average length of stay is three and a half years.

In 1952 funds, staff and facilities were provided to develop an active intensive rehabilitation program for the large number of severely paralyzed poliomyelitic respirator patients who had accumulated there over several years. The results were good,^{1,2} tempting the staff to extend the intensive methods to some of the other disabled patients with a myriad of other diseases. Consequently, in 1955 staff and facilities were provided for an intensive rehabilitation program for non-poliomyelitic patients in a 35-bed unit. This included, in addition to an increased medical and nursing staff, physical and occupational therapy, medical social service, psychological and vocational services, bracing and splinting as well as a developmental orthotic shop, surgical, x-ray and clinical laboratory services. The results were better than expected, resulting in expansion of the program.

PATIENT SELECTION

The patients admitted to the 35-bed intensive rehabilitation unit were selected by physicians of the staff. There were two sources for patients. Initially

selection was from patients already at the hospital, which limited the choice to patients who had already been there for years beyond their initial illness and long since had become accustomed and adjusted to a quiet and protected hospital environment. Their vocational opportunities had disappeared, family contacts had diminished and interest in outside life had dimmed. To some, there was no interest or desire to undergo a program of rehabilitation. They did not want their situation disturbed, unless there was something better to hope for and probability of achievement.

It was therefore important for the staff to search for those who had the physical and mental potential for successful rehabilitation, and then convince them of their potential in order to raise their desire for the program and make them willing to work hard for results.

The second source of patients was referral from surrounding acute hospitals, particularly the Los Angeles County General Hospital. Members of the staff of the county hospital who happened to know about the program would periodically refer from their wards patients who they felt were potential candidates. It soon became obvious, as others have reported,⁴ that the sooner patients could be started in the program after the acute stage of disease passed, the shorter the time required for rehabilitation and the better the results. Despite this knowledge, priority was given to patients already at the hospital, in recognition of a feeling of first responsibility to them.

PATIENT CLASSIFICATION

In order to evaluate the patients before and after treatment we used a profile classification originally designed for our postpoliomyelitis rehabilitation program. The patients were classified with this system at the time of admission to the rehabilitation program and again at the time of final disposition of the case so far as the program was concerned. The classification was based on the status of the patients in four categories:

1. Physical dependence—meaning how dependent they are upon help from others to carry out their normal daily activities. They were permitted to use any devices available to them, as we are only interested in what they can do for themselves as against how much help they need from others.
2. Respiratory—need for mechanical respiratory assistance, such as the iron lung or other respirators.
3. Vocational—defined as their ability to provide for their financial needs at whatever level they are accustomed to. This included their family needs if they had the responsibility for such.

TABLE 1.—Disease Causing Disability in 85 Patients in Intensive Rehabilitation Program

Diagnosis	Adults	Children	Total
Amputation	5	....	5
Arthritis, rheumatoid	5	1	6
Arthrogryposis .....	....	2	2
Encephalomyelitis	2	....	2
Hemiplegia	10	....	10
Muscular dystrophy .....	....	2	2
Neuromuscular diseases, miscellaneous	7	4	11
Orthopedic conditions, miscellaneous.....	6	....	6
Paraplegia	21	7	28
Quadriplegia	12	....	12
Rheumatic heart disease.....	1	....	1
Total.....	69	16	85

4. Motivational—defined as their desire to improve and their willingness or eagerness to work for such.

Each area was broken into one of three scales: I. Minimal or no disability; II. Partial disability; III. Full disability.

A patient could be a D-III (fully dependent on others for physical help), but be a V-I (financially independent) by virtue of mental skills and good motivation (M-I). On the contrary, a patient could be physically disabled in such a way that he is physically independent (D-I), yet be financially dependent (V-III) owing to poor motivation (M-III). We purposely used a very gross three-scale classification limited to four basic categories in order to avoid detailed classification of many functions. The respiratory factor is obviously more important with poliomyelitic patients, yet quadriplegics may also have such involvement.

RESULTS

From November 1955 to November 1957 there were 85 patients who completed the program—69 adults with an average age of 38 years and 16 children with an average age of seven years. The age range was from two to 71 years. The duration of illness from onset to admission to the rehabilitation program averaged five years with a spread of from three weeks to 32 years. The previous period of hospitalization ranged from three weeks to 12 years. The average length of stay in the rehabilitation program was six and a half months. The basic diseases of the patients are listed in Table 1.

The profile classifications are listed in Table 2 for adults and in Table 3 for children. The degree of disability of these patients can be readily seen by looking at the D (physical dependence) column for adults. On admission 37 per cent were completely dependent on others for physical activities. Another 42 per cent were partially dependent, making a total of 79 per cent who were dependent upon others for

TABLE 2.—Changes in Classification of 69 Adult Patients Between Time of Entering Rehabilitation Program and Discharge from It

On Admission			On Disposition		
Status	No. Patients	Per Cent	Status	No. Patients	Per Cent
D—I	14	21	D—I	48	70
D—II	30	42	D—II	17	24
D—III	25	37	D—III	4	6
R—I	68	98	R—I	69	100
R—II	1	2	R—II	0	0
R—III	0	0	R—III	0	0
V—I	2	4	V—I	10	15
V—II	23	33	V—II	41	59
V—III	44	63	V—III	18	26
M—I	1	2	M—I	17	25
M—II	15	22	M—II	31	44
M—III	53	76	M—III	21	31

Status: D—Physical dependence, R—Respirator dependence, V—Vocational dependence, M—Motivational.

Classification: I—Minimal or no disability, II—Partial disability, III—Full disability.

TABLE 3.—Changes in Classification of 16 Children Between Time of Entering Rehabilitation Program and Discharge from It

On Admission			On Disposition		
Status	No. Patients	Per Cent	Status	No. Patients	Per Cent
D—I	0	0	D—I	4	25
D—II	11	69	D—II	11	69
D—III	5	31	D—III	1	6

Status: D—Physical dependence, R—Respirator dependence,* V—Vocational dependence,† M—Motivational.†

Classification: I—Minimal or no disability, II—Partial disability, III—Full disability.

*Respiratory status was all R-I.

†Non-classifiable because of age.

help. On release from the program the figures are reversed. Now, only 30 per cent are dependent with 70 per cent completely independent. The respiratory column shows only one patient with sufficient involvement to require partial use of a respirator. The low incidence in this column is due to the fact that no poliomyelitic patients are included in this study. The profile classification in the principal areas considered in Tables 2 and 3 is presented graphically in Chart 1.

The results of rehabilitation efforts are shown in Table 4. Sixty-eight per cent of the adults released from the program were discharged to their homes, with over half going to employment, not counting the women who went back to housework. Twenty-six per cent remained at the hospital and hence were transferred to the convalescent wards. This was usually due to a social problem of some sort, such as having no home or family. The majority of those staying at the hospital were enough improved that they needed less care; in fact, they were employed on the grounds of the hospital.

The social benefits of such a program are enormous. They include reestablishment or protection of a person's dignity and self-esteem, reestablishment or preservation of his home and family, and interest and participation in an active life. The

PATIENT PROFILE CLASSIFICATION

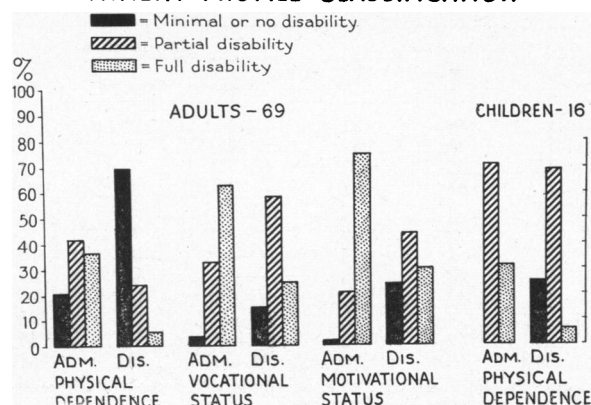


Chart 1.—The data in Tables 2 and 3 are presented. (Adm. = Status on admittance to program; Dis. = Status at time of discharge from program.) Each area exhibits an increase in "minimal or no disability" and a decrease in "full disability." The respiratory status is omitted here, as only one patient was involved.

economic benefits are equally great and from the standpoint of persons responsible for governmental budgets and taxes are of even greater importance. The benefits can be shown in three ways. First, financial status, which is shown in Table 2 in the vocational classification column for adults. Sixty-three per cent were completely dependent for financial help from others on admission, whereas on discharge the proportion had dropped to 26 per cent. This is important with regard to taxes, for the bulk of financial help to these people and their families is from public welfare funds. Another important consideration is that over 50 per cent of the patients discharged became employed and thus taxpayers again.

The second economic benefit is the savings in hospitalization costs per patient. The daily cost on the rehabilitation wards is \$19 as compared with \$9 for the convalescent wards, the difference being due to the higher staffing ratio and more intensive medical services on the active program. But the length of stay was so much shorter that the total cost was much less. Thus \$19 times the 195-day average time in hospital under the intensive rehabilitation program (six and a half months) equals \$3,700 cost for rehabilitation. The usual convalescent care at \$9 for 1,260 days (three and a half years) costs \$11,340. Thus the average savings per patient is about \$7,640. From a purely budgetary standpoint this savings does not become apparent. The hospital's budget does not drop; it rises, for it is carrying a more active program. However, this does not in any way alter the fact that for every patient discharged earlier because of an active program, thousands of dollars are saved.

The third economic benefit is in the greater usage of hospital beds. It is obvious that shortening the period of hospitalization will allow more patients

TABLE 4.—Disposition of 85 Patients from the Intensive Rehabilitation Program

	No.	Per Cent
ADULTS		
1. Discharged to home		
Employed full-time	20	
Employed part-time	5	
In school	6	
Receiving on-the-job training	2	
Discharged to housewife status	10	
Discharged to maintenance status	4	
Total	47	68
2. Transfer to convalescent wards		
Working on hospital grounds full-time	5	
Working on hospital grounds part-time	3	
In school at hospital	3	
Medically incapacitated	7	
Total	18	26
3. Discharged to other institutions	4	6
Total Adults	69	
CHILDREN		
1. Discharged to home	13	81
2. Discharged to other institutions	3	19
Total Children	16	

to occupy a bed in a year. Because the demand for chronic beds is greater than the supply, either more will have to be built or a greater turnover will have to be accomplished, or perhaps both. With construction costs averaging \$10,000 per bed, the increased cost of an active rehabilitation program over a convalescent program that requires more beds will again manifest economic sense.

The job satisfaction and professional achievements by the staff in the program have been contagious to all the personnel in the hospital. Coupling this with the social and economic benefits already outlined leads one to appreciate the feeling that an intensive rehabilitation program is an important function of a chronic disease hospital.

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